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Karl-Erik Neumann

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MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER

FERGUSON, MICHAEL P

ART UNIT

PAPER NUMBER

3679

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DELIVERY MODE

10/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,515	Applicant(s) NEUMANN, KARL-ERIK	
	Examiner MICHAEL P. FERGUSON	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 10, 2009 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships which render the claims indefinite are as follows:

Claim 1 (lines 5-6) recites "each arm joint... comprising a wobbler". Claim 1 fails to clearly and positively claim any structural limitations which enable one to properly determine what structurally constitutes a "wobbler" or enables wobbling movement. Examiner notes that the eccentric cam surface of the wobbler has not been clearly and positively claimed.

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Claim 1 (lines 8-15) recites “at least three machine setting devices , each machine setting device comprising a piston... wherein each arm joint cooperates with said other arm joints in said parallel kinematic machine to move said machine-connected positioning head in space”. Claim 1 fails to clearly and positively claim any structural limitations which enable one to determine the structural engagement and the functional relationship between the other end of each piston and the parallel kinematic machine, or to determine what structural features enable the piston to provide such relative movement of the positioning head. Examiner notes that the connection between the piston and the frame of the parallel kinematic machine has not been clearly and positively claimed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Schaeffler Waelzlager (DE 199 04 702).

As to claim 1, Schaeffler Waelzlager discloses a parallel kinematic machine comprising:

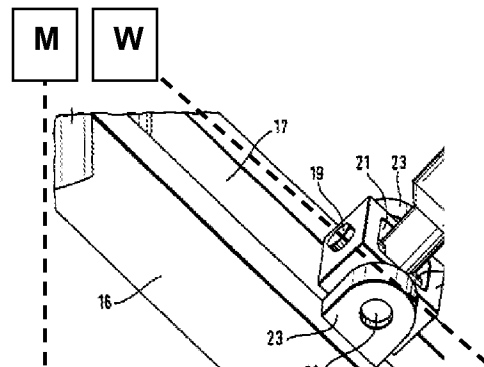
a machine-connected positioning head **10** connected to at least three arm joints **8**, each arm joint (i) defining a main axis **M** about which it can rotate and (ii) comprising a wobbler **8** (Figure 2 reprinted below with annotations); and

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at least three machine setting devices **5**, each machine setting device comprising a piston **6,7**, each piston comprising a distal end **7** displaceable axially in a cylinder, and each distal end connected to one of each of the at least three arm joints;

wherein each wobbler (i) includes an external bearing mounting surface **18** on which the distal end of the respective machine-setting device is mounted and (ii) defines a wobbler axis **W** about which the respective machine setting device can rotate; and

wherein each arm joint cooperates with the other arm joints in the parallel kinematic machine to move the machine-connected positioning head in space (Figures 1-2).



As to claim 2, Schaeffler Waelzlager discloses a parallel kinematic machine wherein each of the at least three arm joints **8** comprise a joint mounting means **23** on opposing sides of each wobbler **8** for mounting each wobbler to the machine-connected positioning head **10** for rotation about the main axis **M** (Figure 2).

As to claim 3, Schaeffler Waelzlager discloses a machine joint characterized in that, for each arm joint **8**, the wobbler axis **W** and the main axis **M** mutually intersect at an angle α , where $1^\circ < \alpha < 45^\circ$ (Figure 2).

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As to claim 6, Schaeffler Waelzlager discloses a parallel kinematic machine wherein each of the at least three arm joints **8** comprises:

a joint mounting means **23** on opposing sides of each wobbler **8** for mounting each wobbler to the machine-connected positioning head **10** for rotation about the main axis **M**; and

a supporting shaft **22** disposed between the joint mounting means and the wobbler; and

wherein the wobbler is firmly connected to the supporting shaft which has two ends that are rotatably connected to the joint mounting means (Figure 2).

As to claim 7, Schaeffler Waelzlager discloses a parallel kinematic machine wherein each of the at least three arm joints **8** comprises:

a joint mounting means **23** on opposing sides of each wobbler **8** for mounting each wobbler to the machine-connected positioning head **10**; and

a supporting shaft **22** disposed between the joint mounting means and the wobbler; and

wherein the wobbler is rotatably connected to the supporting shaft which includes two ends of which at least one end is connected to the joint mounting means (Figure 2).

As to claim 8, Schaeffler Waelzlager discloses a machine joint characterized in that one end of the supporting shaft **22** is inserted in a first joint mounting means **23** which is secured axially by a clamp coupling (supporting shaft **22** is axially clamped/coupled between opposing flanges **23**; Figure 2); and in that the other end of the supporting shaft is firmly connected to a second joint mounting means **23** (Figure 2).

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As to claim 9, Schaeffler Waelzlager discloses a parallel kinematic machine wherein each of the at least three arm joints **8** comprises:

a joint mounting means **23** on opposing sides of each wobbler **8** for mounting each wobbler to the machine-connected positioning head **10**; and

a supporting shaft **22** disposed between the joint mounting means and the wobbler; and

wherein for each joint, the wobbler axis **W** and the main axis **M** mutually intersect at an angle α , and wherein the angle α is orientated in relation to the a supporting shaft so as to permit tilting between the machine setting devices **5** and their respective wobblers by a rotation of the wobblers about the main axis (Figure 2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaeffler Waelzlager.

As to claim 4, Schaeffler Waelzlager fails to disclose a machine joint wherein, for each arm joint, the wobbler axis and the main axis mutually intersect at an angle wherein the wobbler axis and the main axis intersect at an angle α between 5° and 20°. Schaeffler Waelzlager does not disclose any structural or functional significance as to the specific angle at which the wobbler axis and the main axis intersect.

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The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the machine joint disclosed by Schaeffler Waelzlager wherein the wobbler axis and the main axis intersect at an angle α between 5° and 20° as Schaeffler Waelzlager does not disclose any structural or functional significance as to the specific angle at which the wobbler axis and the main axis intersect, and as such practice is a design consideration within the skill of the art which would yield expected and predictable results.

Response to Arguments

8. Applicant's arguments filed April 10, 2009 have been fully considered but they are not persuasive.

As to claim 1, Attorney argues that:

Schaeffler Waelzlager does not disclose a parallel kinematic machine comprising a machine-connected positioning head connected to at least three arm joints, each arm joint comprising a wobbler; *wherein each wobbler includes an external bearing mounting surface on which the distal end of the respective machine-setting device is mounted.*

Examiner disagrees. As to claim 1, Schaeffler Waelzlager discloses a parallel kinematic machine comprising a machine-connected positioning head **10** connected to at least three arm joints **8**, each arm joint comprising a wobbler **8**; wherein each wobbler

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includes an external bearing mounting surface **18** on which the distal end **7** of the respective machine-setting device **5** is mounted (Figure 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL P. FERGUSON whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (6:30am-3:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPF
09/29/09

/Michael P. Ferguson/
Primary Examiner, Art Unit 3679